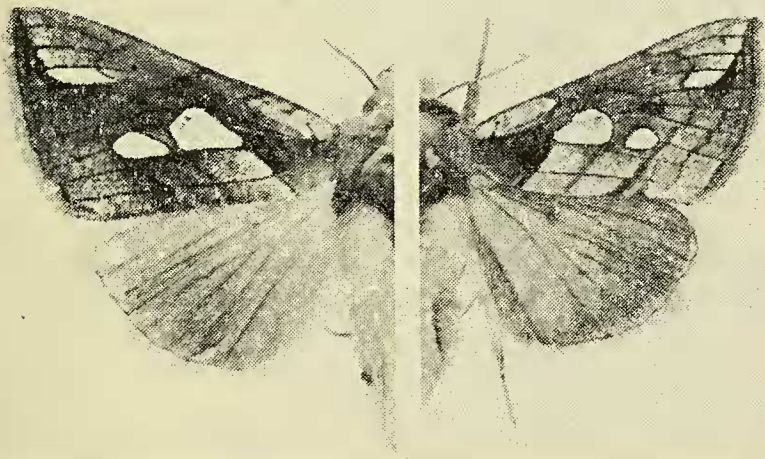


Autographa festucae Linnaeus and *Autographa gracilis* Lempke

By B. J. LEMPKE

Several notes have already been published in the *Ent. Rec.* about localities where *Autographa gracilis* was met with, but I presume that many British and Irish lepidopterists who have not seen my original article on the subject wonder how they can distinguish *gracilis* with certainty from *festucae*. It is true that both species were by chance figured already by South in his original edition of the Moths of the British Isles, but copies of the 1908 issue in which the plates had still their good colours will no doubt be rather rare at present.

I therefore think I cannot do better than to reproduce again the excellent photos made by my compatriot Mr J. Huisenga and which accompanied my original article. The external differences between the two species are the following: *A. gracilis* is as a rule smaller than *A. festucae*, the ground colour of its fore wings is redder, the lowest silver spot near the apex is shorter (because the postmedian is less bent inward) and broader and the two discal silver spots are also shorter and therefore proportionately higher. If those who possess a good copy of the old edition of South compare his figures after having read the above, they will see that all these differences are clearly shown by them with the exception of the shape of the postmedian, because the print of the plate is not sharp enough to give such details.



Wing markings of *Autographa festucae* Linnaeus (left) and *A. gracilis* Lempke (right).

After the publication of my article it appeared that several lepidopterists in the Scandinavian countries and in Russia had already suspected that two species were hidden in the series of *A. festucae* from their countries, but none had ever made slides to check this or had published a note on it. That we have to do with two different species is not only proved by the constant differences in their appearance, but also by their genitalia (both of male and female) and their biology. As it is not difficult to separate the two by their external characters I refrain from giving figures again of the genitalia. They can be found in my original article.

Although we know still very little about the biology of *A. gracilis*, two important differences with *A. festucae* could be established, at least in the Netherlands. First the number of generations. Whereas *A. festucae* is clearly double brooded with a second generation that outnumbers the first, *A. gracilis* has as a rule only one generation. In favourable seasons a very small second one may occur in the second half of September and the first week of October, but neither in 1967 nor in 1968 it was observed. The optimal flying time of the first generation of *A. festucae* is June, that of *A. gracilis* the second half of June, but especially July, so that they overlap. Cf. the histograms I gave in supplement 13 of the Catalogue of Netherlands Macrolepidoptera, p. 909 and p. 912 (1966).

A second difference is the biotope. Whereas *A. festucae* may be found everywhere where the food plants of the caterpillar grow, *A. gracilis* is confined to moist places. Especially in marshes it may be common, more numerous indeed than true *festucae*.

No differences are yet known between egg, caterpillar and chrysalis of the two species. I met with a few bred specimens in Netherlands collections, but the captors had found the caterpillars in a time when we had not yet the slightest suspicion of the existence of two different species. One of the breeders, however, had kept the cocoon, so that I could compare it with three cocoons of *festucae* in the collection of the Amsterdam Zoological Museum. The latter were all made in the bend of a leaf as is usual with this species. The result is that the *festucae* cocoon is rather short and broad. The *gracilis* cocoon on the contrary is long and slender (spindle shaped, length 4 cm., greatest breadth 7 mm.) and lays stretched out on (or under?) a narrow leaf. It is of course not certain that the *gracilis* caterpillar always spins its cocoon in this way. If so the difference between the two is very striking. The colour is, in both species, the same, greyish white, the cocoon of *gracilis* perhaps a trifle yellower. As is the case in *festucae* the dark pupa shines more or less through the tissue. It is possible that the two chrysalids show differences in the anal hooks, but as I was not allowed to open the so far unique cocoon this problem must be postponed till more material is available.

The distribution of *A. gracilis* is still insufficiently known. As far as we know at present it occurs in England, Scotland, the Netherlands, West and East Germany, Denmark, Norway, Sweden, Finland, the Estonian SSR and I also saw a specimen from Austria. It would be interesting to know if it really fails in Ireland. The species is almost certainly to be expected in Belgium and the marshes of northern France. Mr. J. Viidalepp from Tartu in the Estonian SSR informed me that *gracilis* is very common there. Further Russian localities are not yet known.

Finally a few remarks on the specific nomenclature. In 1968 the Finnish lepidopterist T. H. Clayhills published a short note on this subject. He writes that he sent a few specimens to Leningrad, where Dr. V. I. Kuznetshov compared a photo of a slide of a Finnish male with the (holo) type of *A. festata* Graeser, which is in the collection of the Zoological Institute of the Academy of Sciences in that town. Kuznetshov answered that the photo of the slide agreed with the genitalia of the ♂ holotype, so that Clayhills concludes that *gracilis* is a synonym of *festata*. I must say that I am not in the least convinced that this conclusion is correct. First there are the external differences. *A. festata* is smaller, head, collar and patagiae are paler and the two silver discal spots are (as far as we know)

always united. In *gracilis* these spots are (just as in *festucae*) nearly always separated. The male genitalia resemble each other much and I can imagine that a lepidopterist who only judges by these organs declares the two identical. But the female genitalia differ so strongly that in my opinion the two cannot be considered conspecific. *A. gracilis* ♀ has an enormous bursa (still larger than *festucae*!), whereas the ♀ of *A. festata* has a much smaller bursa with a differently shaped sclerotized patch. Neither is the shape of the ostium identical.

Excellent figures of the genitalia are also given by Urbahn. They too show the enormous size of the *gracilis* bursa compared with that of *festucae*.

Clayhills further writes that "*P. barbara* Warr. described from Morocco (Warren 1906), has been suggested to be identical with *P. gracilis*". This species is only known from one ♀ which is in the collection of the British Museum (Nat. History). Its forewing markings are not identical with those of *A. gracilis* (which might point to a subspecific difference). But here again the genitalia differ considerably. Those of *barbara* are smaller, the shape is different and the sclerotized patch is not identical. For the present I can only maintain my opinion that we have to do with three different species, not with three subspecies of one specific unit.

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Note.—It is a pity that the Norwegian lepidopterists named their new periodical "*Atalanta*", for in 1964 a German one with exactly the same name was erected for the publication of data on migrating insects, especially Lepidoptera.

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EARLY APPEARANCE OF *PACHYCNEMIA HIPPOCASTANARIA* HÜBN.—I was astonished on clearing my mercury vapour light trap on 26th January to find a specimen of this species, which I kept as of great interest. On 28th January there was another specimen in the trap! South (Moths of the British Isles, 1961) says "The first flight of the moth occurs in April and May; the second in August . . ." My own records show that the earliest I have previously taken it here was on 19th April (1964), and the latest 26th November (of the same year).—L. W. SIGGS, Sungate, Football Green, Minstead, Lyndhurst, Hants.